Copper Communication Facilities Usage in the IP Transition
Last-Mile Copper Facilities Usage – TPx Communications

- TPx
  - Founded in 1998
  - 1600 Employees
  - Headquarters in Los Angeles, CA
  - Full Facilities-based Managed Services Carrier
  - Nationwide Access footprint
  - Approximately 34K customers – more than 50% in CA

    - **Network Overview**
      - 600 metro fiber route miles, containing over 54,000 fiber miles
        - Backhaul between Data Centers, POPs/POIs, and across markets
          - Control: cost and quality
          - Complete ring diversity
        - Built into ILEC (LSOs, SWCs) for T1 aggregation, Ethernet over Copper (EoC) and POTS (Plain Old Telephone Service)
        - Fiber to businesses
          - Lease rather than build

- **Leased Last-Mile Access**
  - Copper
  - Ethernet Fiber
  - TDM DS1

    - Copper UNE loops - ILEC
      - Ethernet over Copper (EoC)
        - Viable 3-20 mg solution for small to mid-size customers
          - Cost effective
      - Plain Old Telephone Service (POTS)
        - Dependable solution for residential and many small businesses
          - Cost effective
      - Availability dependencies
        - Impediments
      - Install interval – 5 to 10 days

    - Ethernet Fiber - ILEC, Cable Companies
      - Scalable solution for higher bandwidth needs
        - Limited coverage
          - Builds often necessary
            - Extended install intervals – avg. 120 days

- TDM DS1
  - Generally available
    - Bandwidth limitations; not the most cost effective solution
  - Install interval – 7 to 10 days

- **Wholesale to other Carriers**
  - 90 customers
    - Transport/Access > Network Carriers
    - Turn Key solution > Resale Carriers

  - Utilization of network assets
    - Excess capacity

      - Opportunities
        - Transport/last mile access > Network Carriers
          - Ethernet: EoC or Fiber
          - TDM – on and off net
          - Internet Access

- Turn Key solution > Resale Carriers
  - Voice Products
    - i.e. POTS
  - Internet Access

- Challenges
  - EoC
    - Reliable and accurate information
    - Impediments
    - Quality
      - Maintaining the copper
    - What is the alternative?
      - DS1
      - Fiber

  - Fiber
    - Availability
    - Cost
      - Prohibitive at lower speeds
      - Potential up-front costs

- POTS
  - Introduction of Fiber into the path
  - Impairments

- TDM DS1
    - Bandwidth limitations
    - Cost effectiveness